



Edgewood College 2017 Green Tier Report

July 2018



EDGEWOOD COLLEGE



GREEN TIER

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**Edgewood College
Madison, Wisconsin
Annual Report for 2017
July 2018**

I. EXECUTIVE SUMMARY

Edgewood College is committed to creating a sustainable environmental management system for the entire campus living and learning community. By becoming a Green Tier participant, Edgewood College reaffirmed its commitment to its environmental policy which includes four major strategies; 1) complying with regulatory requirements, 2) reducing our ecological impacts, 3) fostering continuous improvement and 4) integrating environmental awareness and conservation into our curriculum.

For the year 2017, we created several goals that shaped the College's environmental and sustainability efforts from both an operational and educational perspective.

Goal 1 -- Buildings: Through implementation of ongoing energy reduction projects, reduce electrical use by 2% and natural gas use by 2% in Campus buildings based on a three-year seasonally adjusted baseline.

Result: Electricity – For 2017, the College saw a decrease of 5.3% of kilowatt-hours per square foot electricity usage compared to the prior three-year average used as a baseline. Comparing 2017 to 2016 alone the decrease was 3.6%.

Result: Natural Gas – For 2017, the College saw a 10.7% decrease in its measurement of the weather adjusted use of natural gas compared to the prior three-year base period average. Comparing 2017 to 2016 alone the decrease was 6.0%.

Goal 2 -- Communications: Create an internal web page to share sustainability information, including Green Tier reports and other accomplishments and best practices.

Result: A web page was created by a collaborative effort of faculty, staff and student involvement. Various projects, efforts and happenings have been posted to the page, which is updated on an ongoing basis as new material is provided. So far, the page has been used for class projects, general awareness around Campus and to populate sustainability marketing documents.

Goal 3 – Solar PVs: Conduct a feasibility exploratory study for solar photovoltaic device installation on Campus.

Result: Several meetings with prospective project consultants and a subset of the Campus Sustainability Coordinating Team (CSCT) were held in 2017 to explore the scope and feasibility

of installing additional solar panel systems on Campus. Based on the current cost of implementation, payback, age of roofing materials and other factors, it was decided to revisit the concept in a few years when expected technological improvements would potentially allow for better efficiency and cost justification.

Goal 4 – Trees: In honor of our Tree Campus USA certification, assess 10 high impact trees on Campus for health issues and develop specific appropriate care management plans.

Result: A team including Edgewood's certified arborist, an outside consultant and faculty, staff and students developed a 2017 and beyond tree care plan and budget. A part of this effort included a risk assessment and care plan for at least 10 trees of significance on Campus. The ongoing plan and team activities will ensure needed attention and service to all tree species on the property.

Other 2017 highlights include:

- Edgewood College has been included in the 2017 edition of *The Princeton Review to 375 Green Colleges* (www.princetonreview.com/green-guide).
- 100% green power electricity was purchased from Renewable Choice for the Stream, our LEED-Gold Certified Visual Arts Theater.
- Water usage was 6.6% lower than the base period average.
- Additional water bottle fillers at drinking fountains continue to reduce the amount of single-use plastic bottles used on Campus.
- Replacement of more toilets with 1.28-gallon flush low volume toilets in residence halls.
- Reduced paper used in printers and copiers by over 6%.
- Two waste audits were conducted in 2017 to evaluate the effectiveness of recycling and composting programs.

The Campus Sustainability Coordinating Team continues to assess and improve the College's environmental and sustainability efforts since joining Green Tier. This review provides for the continuous improvement objective which is included in the college's environmental policy and environmental management system. The report provides further in depth information on our efforts to meet our 2017 goals, and other efforts underway.

II. INTRODUCTION

Edgewood College is a liberal arts college located in Madison, Wisconsin, adjacent to Lake Wingra. The College is administered by the Sinsinawa Dominican Sisters. In 2006, Edgewood College became a member of the Green Tier Program.

Our sustainability efforts are guided by Edgewood's unique Campus Sustainability Coordinating Team (CSCT) composed of faculty, administrators, staff and students. The team meets monthly to collaboratively advance sustainability initiatives.

Edgewood College has a commitment to environmental stewardship and sustainability which resonates deeply at the College, a legacy begun by the native people who first cared for this very special 55-acre campus (including high school and elementary school) on the shore of Lake Wingra. The College is honored to be part of the sustainability legacy we inherited.

III. ENVIRONMENTAL PERFORMANCE

a. Electricity and Natural Gas Use

Our goal for 2017 was to reduce energy use by 2% in campus buildings compared to a three-year baseline through implementation of ongoing energy reduction projects. The 2017 results are discussed below.

- **Electricity** – For 2017, the College saw a decrease of 5.3% of kilowatt-hours per square foot electricity usage compared to the prior three-year average used as a baseline. Comparing 2017 to 2016 alone the decrease was 3.6%. These results demonstrate the effect of the projects and initiatives the College has implemented to reduce electricity usage. Compared to 2008 the College's overall electricity usage per square foot is now 25.3% lower.
- **Natural Gas** – For 2017, the College saw a 10.7% decrease in its measurement of the weather adjusted use of natural gas compared to the prior three-year base period average. Comparing 2017 to 2016 alone the decrease was 6.0%. Compared to 2008 the College's overall weather adjusted natural gas usage per square foot is now 30.5% lower.
- **Renewable Energy** – 100% green power electricity was purchased from Renewable Choice (<http://www.renewablechoice.com>) for the Stream, our LEED-Gold Certified Visual Arts Theater building.

Energy Usage Comparison Summary											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	3 Yr Base Period Avg (2014-2016)
Electric						(a)					
Total Billed	\$683,645	\$659,124	\$681,933	\$691,014	\$697,227	\$760,144	\$706,477	\$721,532	\$672,372	\$664,089	
Total Kwh's	6,996,114	6,703,811	6,674,838	6,557,369	6,325,308	6,581,141	6,140,186	5,972,273	5,882,948	5,672,317	5,998,469
Total Square Feet	519,694	519,694	519,694	521,448	521,448	565,419	565,419	565,419	564,447	564,447	565,095
Kwh/Sq ft	13.46	12.90	12.84	12.58	12.13	11.64	10.86	10.56	10.42	10.05	10.61
% Change from Prior Year		-4.16%	-0.47%	-2.02%	-3.58%	-4.04%	-6.70%	-2.76%	-1.33%	-3.55%	
% Change from 3 Yr Base Avg										-5.28%	
Gas						(a)					
Total Billed	\$294,826	\$238,176	\$213,655	\$215,900	\$177,536	\$201,653	\$218,024	\$145,773	\$105,580	\$116,565	
Total Therms	298,599	292,340	298,232	316,648	290,959	319,710	292,488	237,237	198,002	199,377	242,576
Therms/Sq ft	0.593	0.580	0.579	0.617	0.567	0.574	0.525	0.426	0.356	0.359	0.436
Heating degree days (HDD)	7499	7487	6747	7369	5896	7263	8227	6838	6092	6527	7,052
Therms/Sq Ft/HDD	0.0000790	0.0000775	0.0000858	0.0000837	0.0000962	0.0000790	0.0000638	0.0000623	0.0000584	0.0000549	0.0000615
% Change from Prior Year		-1.94%	10.67%	-2.36%	14.84%	-17.84%	-19.23%	-2.41%	-6.15%	-6.02%	
% Change from 3 Yr Base Avg										-10.68%	
(a) Started including data for The Stream for full calendar year 2013.											
(b) East Regina opened Aug. 2016 and is not included yet in annual comparison data above											
								2016	2017		
								East Regina Electric - billed	\$31,031	\$48,379	
								East Regina Gas - billed	\$11,112	\$13,773	

b. Water Use

College water usage for 2017 was 6.5% lower than the amount used in 2016 and was 6.6% lower than the base period average.

Water Usage Comparison											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Base Period Avg (2014-2016)
Gallons Used	9,272,956	8,916,160	9,783,840	9,023,872	9,412,084	8,477,084	7,498,887	8,135,303	7,809,212	7,298,324	7,814,467
% Change from Prior Year		-3.8%	9.7%	-7.8%	4.3%	-9.9%	-11.5%	8.5%	-4.0%	-6.5%	
% Change from Base Period Avg.										-6.6%	

Water Reduction Efforts:

- Ongoing replacement of traditional drinking fountains with bottle filler drinking fountain stations continues to prevent the need for single-use plastic bottles (7 units installed this year).
- We implemented and continue to use water treatment in the boiler and cooling water systems. By treating the water used in those closed-loop systems we extend the life of the water by years versus months as with using untreated water. For example, in Marshall Hall we have used the same water in the boiler loop for 3 years now without any need to replace it as of yet due to our conditioning process. This also helps with the

cooling tower in the Sonderegger Science Center which uses thousands of gallons of water per season. Keeping the water treated in this system has resulted in purge rates less than 50% of that prior to water conditioning.

- New water softeners were placed at West Regina Hall, Sonderegger Science Center and Predolin Hall to reduce salt usage and water usage.
- Replaced 8 more toilets with 1.28 gallon flush toilets in residence halls.

c. **Buildings**

Edgewood College maintains a continuous improvement perspective with regard to our facility operations. Enhancements in 2017 include:

- **Lighting:** Replacement of fluorescent and CFL fixtures with LED technology in stairwells and at our Deming Way Campus (see Sustainability Fund section for more).

d. **Waste**

Waste Reduction Efforts:

- Two waste audits were conducted in 2017 to evaluate the effectiveness of recycling and composting programs.
- The College is using confidential recycling containers to improve recycling on campus. Our paper recycler provides bins for paper only in specific areas. This paper is shredded and returned to paper mills for processing.
- New waste/recycling stations have been added near classrooms in Predolin Hall and DeRicci Hall with the goal of encouraging more mindfulness in disposal. We continue to use containers labeled 'Landfill' which are paired with containers intended for single stream recycling.
- We continue our composting program for post-consumer items beginning in the dish room. This diverts waste to become compost that can also be used in our garden.
- Our Bookstore continues to recycle or reuse each corrugated box and packing material that comes into the bookstore.
- The Custodial team continues to use brown paper where possible to reduce the impact of bleached paper products.
- In order to reduce paper waste, the Human Resources Department continues to post resumes directly to an internal web page so that all hiring teams can view the candidates' information versus printing out copies. In addition, employee changes are done via electronic form versus paper copies.

e. **Landscape and Grounds**

- **Tree Planting:** The College in partnership with the Dane County Environmental Council organized a volunteer event during Earth Week to plant over 100 native trees and shrubs in our woodland area.
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- **Woodland Garden:** The College has developed a woodland garden with path behind Regina and Stevie Halls that is also be available as an education space.
- **Additional Edible Plantings:** The whiskey barrels on campus containing flowers in front of Sonderegger Science Center and Regina Hall areas now also contain kale, brussel sprouts, and other delicious healthy edibles.
- **Certifications:** Edgewood College has achieved recognition in the Tree Campus USA program of the Arbor Day Foundation again for 2017, and been named a Certified Wildlife Habitat by the National Wildlife Federation. The rain gardens/pollinator gardens at Marshall Hall and Mazzuchelli Hall have been certified by the National Butterfly Association. Due to the inclusion of several varieties of milkweed, these gardens are also specifically registered as Monarch Gardens.

f. **Transportation**

Performance data in this section is provided for the academic year (August-May) rather than calendar year.

i. ***Madison Metro Bus Program***

Edgewood College provides low-cost Madison Metro bus passes for all students, faculty, and staff. Ridership this year required students, faculty and staff to contribute to the cost of the bus pass, and to possess a valid Edgewood ID to receive a pass.

User Participation Record – 2017-2018 Academic Year

	Fall	Spring	Total
2006-2007	841	574	1415
2007-2008	918	750	1668
2008-2009	1252	751	2003
2009-2010	1319	749	2068
2010-2011	1289	859	2148
2011-2012	1202	971	2173
2012-2013	1195	928	2123
2013-2014	1147	910	2057
2014-2015	1305	913	2218
2015-2016	1219	817	2036
2016-2017	700	470	1170
2017-2018	609	369	978

ii. Commuter Shuttle Program

Edgewood College offers a FREE shuttle program for students, faculty and staff as an alternative to parking on campus. Participants park at either AMC Star Cinema on McKee Road or Westwood Christian Church on Odana Road. The program has been designed to reduce the stress associated with parking and commuting to campus. It also gives members of the community a way to save money and help the environment. Users of the shuttle program have reported cost savings of close to \$500.

User Participation Record – 2017-2018 Academic Year

	Totals
2007-2008	84
2008-2009	149
2009-2010	125
2010-2011	143
2011-2012	150
2012-2013	167
2013-2014	122
2014-2015	130
2015-2016	124
2016-2017	113
2017-2018	109

iii. Commuter Biking Program

Faculty and staff who bike to campus are encouraged to participate in the College's registered biking program. Participants are issued a swipe card for the Saris HUB system which allows them to track their trips, mileage, CO2 saved, and gas money saved.

g. Dining Services

Edgewood College Dining Services is committed to environmental stewardship and sustainability. Since the main dining hall (Phil's) was remodeled in 2007, a renewed energy has pushed Dining Services to embrace our obligation to the environment on behalf of the Edgewood College Community. As a part of our commitment, Phil's is proud to be the first college dining facility in the state of Wisconsin to have become a Certified Green Restaurant®.

Dining Services continues to implement local product sourcing into our programs when possible. Dining Services is also very conscious of waste reduction. We continue to donate any food that cannot be utilized on our production to a local charitable organization that is then distributed to those in need.

- **Composting:** Dining Services is composting kitchen scraps and coffee grounds from our dining areas year-round offsite. Dining Services pays pick-up fees and can receive soil in

return. Previously, we composted about 100 gallons every other week. We continue to compost yard waste down the hill from our garden.

- **Certified Green Restaurant Status:** Phil's Cafeteria was [re-certified as a 3-Star Certified Green Restaurant](http://www.dinegreen.com/). Continuing to be environmentally responsible remains an important condition of our dining services partnership with our contract dining services provider Chartwell's, and this recognition validates our shared efforts in that important area. (<http://www.dinegreen.com/>)
- **Reusable Takeout Container Program:** Many students, staff and faculty have purchased BPA-free reusable containers. They can purchase the container to use as long as desired and then receive their investment back upon returning the container when no longer desired. After each use, the container can be returned to Dining Services for cleaning, the person will be given a token, and can exchange the token the next time for a clean container.
- **Community Garden:** Our Woods Edge student organization uses a community garden to harvest their own food to be used on Campus and for other purposes. This reduces the amount of packaging as well as transportation cost for a portion of the food supply.

h. Paper Use and Information Technology

Performance data in this section is provided for the academic year (August-May) rather than calendar year.

i. Paper Use

In 2013, we implemented PaperCut, a paper management system. Key indicators tracked are pages printed and jobs. This information is shared with faculty and staff on a monthly basis. The information is also conveyed in terms of trees consumed, CO2 produced, and equivalent bulb hours. For 2017-2018, we achieved reductions in pages, jobs, trees consumed, CO2 produced, and equivalent bulb hours.

	Pages	Jobs	Trees Consumed	CO2 Produced (kg)	Equivalent Bulb Hours
2013-2014	3,690,481	453,508	31.76	11,503 kg	724,285
2014-2015	3,684,658	442,402	31.98	11,585	729,463
2015-2016	3,354,434	414,659	28.48	10,317	649,564
2016-2017	2,988,656	377,673	23.90	8,658	545,115
2017-2018	2,793,767 (-6.52%)	348,707 (-7.67%)	22.43 (-6.15%)	8,124 (-6.17%)	511,480 (-6.17%)

ii. Computer Management

Edgewood College continues to replace computer/monitor systems with new, higher efficiency models as part of an annual update and replacement process. In addition, we work with an electronics recycler which provides a world-class level of materials recycling and landfill reduction practices.

j. Sustainability Fund

The Edgewood College Sustainability Fund was established when the College joined the Billion Dollar Green Challenge (<http://greenbillion.org>) which encourages colleges, universities, and other nonprofit institutions to invest a combined total of one billion dollars in self-managed revolving funds that finance energy efficiency improvements. Participating institutions achieve reductions in operating expenses and greenhouse gas emissions, while creating regenerating funds for future projects.

Our green revolving loan fund provides financing for specific projects that reduce the use of natural resources and also save money. The savings generated from a project are used to repay the revolving loan fund and in turn provide funding for future projects.

Evaluation criteria for project proposals under the Sustainability Fund are: (1) Supports and advances the Campus Sustainability Strategic Plan; (2) Has a financial payback period of no more than 7 years; (3) Creates opportunities for innovative, transformative change; (4) Has total costs that are a reasonable portion of funds available; and (5) Would not otherwise be implemented at the present time without the support from the Fund.

Students enrolled in BUS 455 Sustainability & Innovation class worked on CSCT service-learning projects associated with our Billion Dollar Green Challenge Sustainability Revolving Fund.

In 2017, the Fund's project investments included:

- Replacing 205 fluorescent lighting fixtures at our Deming Way Campus with LED units, and 90 stairwell fixtures on the main Campus with LED units and dimming/occupancy ability. The project cost \$38,604 with annual expected savings of nearly \$7,000 for a payback period of 4.6 years.

k. Communication

CSCT continues enhanced communications with the campus community. We manage a Sustainability Bulletin Board in a public area of DeRicci Hall. We create brochures, green tips, and other material for the bulletin board.

Edgewood College has been included in the 2017 edition of *The Princeton Review to 375 Green Colleges* (www.princetonreview.com/green-guide).

IV. EMS AUDIT

An internal audit of Edgewood College's Environmental Management System was conducted in 2017. The results of the EMS audit indicate that the Edgewood College environmental management system (EMS) conforms to the ISO 14001 functional equivalency requirements and the specific additional requirements of the Green Tier program found in ss.299.83. "Continual improvement" and the active "preventive and corrective process" were demonstrated by the changes established in the EMS. The findings also confirmed that Edgewood College is operating the EMS in a manner that results in "superior environmental performance" as defined by the Green Tier Program.

V. STAKEHOLDER INVOLVEMENT

One of the four goals of Edgewood College's Environmental Policy is to develop courses that integrate environmental issues, enrich the learning experiences of students, provide practical solutions to work-life and home-life situations, and maintain a leadership role as a community resource that exemplifies environmental management excellence. Edgewood College has implemented the following to move this goal forward.

a. Undergraduate Studies

All Edgewood undergraduate students must accrue certain "experiences" by successfully completing a number of "tagged" courses that fall into certain categories, one of which is "Perspectives on the World." Students must take at least one course with an "E" tag, which has been approved as meeting the criteria for the Environmental Perspectives experience. The following describes the goals that have been established for the Environmental Perspectives experience (for "E" tagged courses):

Human society is completely dependent on the Earth's ecological systems, but these systems are increasingly stressed by human activity. Knowledge of environmental issues enables students to recognize and respect the complex natural systems upon which contemporary society is built. This knowledge cultivates a sense of responsibility for addressing the short and long term consequences of human activity and provides the necessary framework for seeking solutions to ecological problems. Specifically, each student will be able to:

1. Recognize the interdependence of human society and the natural environment and the ways in which principles of ecological sustainability are essential to building a just and compassionate world.
2. Demonstrate how concepts of ecology are central to many areas of study.
3. Identify the ecological consequences of human activity on the Earth and envision fundamental solutions that work toward long-term sustainability.

More than thirty courses have been approved for the "E" tag.

In addition, an Environmental Studies Minor allows students to pursue a broad, interdisciplinary view of environmental issues. The Environmental Studies program offers a minor that complements any of the majors on campus.

b. Graduate Studies

The Sustainability Leadership Graduate Program offers a graduate level certificate to students and fellows who apply course concepts to address real-world ecological and social issues in their organizations or communities.

c. Wood's Edge and 2017 Earth Week Activities

Wood's Edge is a student organization with goals to provide opportunities for social outdoor activities (e.g. camping, hiking, canoeing, and skiing) and to get involved in environmental issues at a local, state, national, or global level.

One of Wood's Edge major activities is helping to manage Edgewood's annual Earth Week activities associated with the Earth Day holiday. The 2017 Earth Week program included:

- Table Fair held in Wingra Commons featuring academic programs and opportunities for student involvement
- Invasive Species Pull
- Lakeshore path maintenance
- Greens Food and Plant Sale – with plant donations to local food pantries
- Plating of a donated burr oak tree
- Planting of over 100 other native trees and shrubs

Other Wood's Edge activities included planting vegetable gardens to benefit onsite dining services and also local food pantries, various film festivals and outings to wetlands, rivers, and farms.

d. Staff & Faculty Education

- Participation in creation of Campus Sustainability Plan
- Staff and Faculty inclusion on Campus Sustainability Coordinating Team
- Distribution of CSCT monthly meeting minutes

e. Neighborhood Involvement

- The Community Boardwalk along Lake Wingra is available to the public as well campus community. The college partners with Friends of Lake Wingra and the Park and Pleasure Drive Association to manage and enhance the lakefront property.

VI. CONCLUDING COMMENTS

Edgewood College has strengthened our EMS in conjunction with our sustainability strategy to continue to produce superior environmental performance. As illustrated in this year's report, there were several innovative and exciting projects completed campus-wide. We look forward to our continued evolution as an environmental leader in higher education.

